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Issue Paper I

STRATEGIES FOR THE INTEGRATED DEVELOPMENT OF RURAL TRANSPORT EQUIPMENT IN DEVELOPING COUNTRIES*

Prepared by the UNIDO Secretariat

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CONTENTS

	Page
I. INTRODUCTION	1
II. ROLE AND PRESENT STATUS OF RURAL TRANSPORT EQUIPMENT IN DEVELOPING COUNTRIES	2
(a) Role of rural transport equipment in agricultural development	2
(b) Present status and problems of rural transportation in developing countries	3
III. FINAL CONSIDERATIONS	5
Annex 1: Principal types of equipment used in rural transport	7

I. INTRODUCTION

1. Transport is recognized as a key sector in economic activity and investment. It is also an important catalyst in economic and social development. As such, the improvement of the transport situation and the means to increase and strengthen this sector's contribution to the industrialization process in developing countries deserves careful attention. However, there cannot be industrialization without economic basis. At the beginning of this economic basis lies agriculture.

2. Indeed, agriculture is the backbone of economic development in most developing countries, and for this reason governments in these countries have given the highest priority to the development and strengthening of their agricultural base - broadly understood to include crops, livestock, fisheries and forestry - and to mining. The aim is to generate the surplus needed for the growth of industry and other services, while achieving a better integration between agriculture and industry. It is therefore important to develop those industries that can contribute not only to increasing and sustaining agricultural productivity but also to fostering rural development.

3. As such, the development of rural areas will require better transport infrastructure and more transport equipment alternatives, especially for the large number of small farmers usually identified as target groups. In this context, transport requirements for agricultural produce should be given priority in line with the importance assigned to the agricultural sector in order to ensure an orderly development of the latter in developing countries.

II. ROLE AND PRESENT STATUS OF RURAL TRANSPORT EQUIPMENT IN DEVELOPING COUNTRIES

a) Role of rural transport equipment in agricultural development

4. Considering the characteristics of the system of agricultural production and the need for product distribution and final consumption, the transport equipment used can be classified in two clearly differentiated categories:

(i) Transport equipment used to move agricultural products from the place of production to the rural collection or storage points or the processing centres (agro-industry) that are located in the agricultural areas themselves, the plantations or close by, for which short distance transport equipment is required;

(ii) Transport equipment with which agricultural products are moved from the rural collection or storage points to the urban centres, ports or export destinations for their processing or final consumption. Such medium- and long-distance transport equipment should be considered owing to its importance for the operation of the agricultural production system and its influence on the generation of surpluses and capitalization in the rural environment[1/].

5. A variety of transport means and modes are used to meet marketing and other needs. In African as well as Asian rural areas, headloading is by far the most common means of transport. It is used for on-farm transport, gathering of firewood, water and trips to and from marketing outlets. Wheelbarrows and animal-drawn carts or sledges are used by some farmers for on-farm transport and gathering of supplies over short distances. Off-farm transport comprises trips to market centres or certain social amenities, such as health clinics and schools. This relates more to the conventional transport with motorized vehicles.

1/ See Annex 1 for a list of the main transport equipment used in rural areas.

6. In most developing countries, where certain crops have gained a dominant position and make a significant contribution to the national economy by way of exports (for example fruit in Chile, grain (wheat and sorghum) in Argentina and sugar-cane in Mexico), increasing specialization is found in the use and production of appropriate transport equipment to convey these products to the processing and storage centres. Typical equipment used includes trailers, fruit trucks, bin carriers, roller or belt conveyors, agricultural trucks and rural utility vehicles, such as four-wheel drive and pick-up trucks. It should be noted that there is a growing need for silos and appropriate systems for the storage and the processing of most agricultural products. Indeed, in most developing countries, crop losses are due to spoilage resulting from lack of adequate storage facilities and unreliable transport, especially for large volumes of goods over long distances. Requirements for the conveyance of goods at this stage are usually met by road and rail to centres of consumption. At present, road transport is the most important mode. For instance, 60 per cent[2/] of such traffic in Chile is undertaken by road transportation.

b) Present status and problems of rural transportation in developing countries

7. The last three decades have seen an unprecedented expansion in the road system and motor vehicle stock of most developing countries. The general expectation is that future growth will be somewhat slower. All available data implies that transport facilities available in rural areas remain few and inappropriate. There are large numbers of people living in developing countries with limited access to motor vehicles. These people are dependent on traditional means of transport; these are walking or headloading, backloading for goods, with a shoulderpole or yoke as a less common alternative. Sporadic use is to be found of bicycles, handcarts and wheelbarrows, and in some areas, animals and animal-drawn carts.

8. Adequate, reliable and economical transport is an essential, although not in itself sufficient, requirement for the social and economic development of rural areas of developing countries. Government policy-makers and planners as well as aid agencies involved in the preparation, financing and implementation of rural

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2/ Source: Rural transport equipment in Latin America by J. Arturo Portocarrero B., ID/WG.482/1(SPEC.)

transport investment programmes at present tend to focus in most of the cases on infrastructure projects, assuming that private initiatives would respond to the demand for transport services. However, a UNIDO analysis has revealed a number of other factors and problems that hamper the development and operation of an appropriate and adequate total transport system, especially for many small farmers in Africa, Asia, and in Latin America, usually identified as target groups for the benefit of rural transport and rural development.

9. In view of the scarcity of resources and current standards and costs of rural construction and improvement, only slow progress can be expected in extending the geographical influence of motor vehicle transport services to all productive, or potentially productive agricultural areas. In Brazil, for example, less than 20% of rural roads can be expected to be improved within the next 15 to 20 years. In some countries, public transport services operating on improved rural roads are out of reach of the poor half of the rural population because of the high fares charged for their use. Many proven basic vehicles and transport means (e.g. pack animal, bicycles, chee-kees, trailers, handcarts etc.) are found in different countries; however, these are very often unknown or not accepted in other areas where they could be of considerable advantage to those without physical or financial access to motor cars, trucks or buses. Also, current planning emphasizes road construction without full account being taken of existing requirements on the specific needs of rural transportation. In addition, hindering the development of rural areas are foreign exchange restrictions, transport regulations, and terms and conditions of credit available to farmers.

10. Moreover, in most developing countries the lack of effective sector-wide, multimodal transport planning because of the fragmentation of the relevant administrative apparatus, has resulted, as a common practice, in (a) using an additive approach in framing their transport plans, and (b) determining budgetary allocations for transport as a whole and for its various modes and means within the overall national development plan. This situation has obviously created awareness of and concern in those countries over the shortcomings of this planning procedure and led to recognition of the need for an integrated, sector-wide approach to transport planning.

11. Rural transport is an activity which cannot be isolated from a country's economy as a whole. The main objective of rural transport is to search for an agricultural exodus, i.e. to increase agricultural production efficiency and improve the capability of the rural population to help themselves.

III. FINAL CONSIDERATIONS

12. In view of the above, the Consultation is invited to examine the following main aspects to be considered in the formulation of a strategy for integrated development of rural transport equipment in developing countries.

a) In general, integrated development of the transportation system to the economy is recognized as one of the most important factors in economic and social development. Improvement and growth of transport infrastructure and services are perceived as essential for all sectors of the economy thereby generating demand for transport equipment.

b) Based upon this premise, the formulation of a strategy for the development of integrated and systematic transport planning is of fundamental importance. Indeed, each mode of transport such as railways, roads and feeder roads, waterways, pipelines, as well as each means of communication has specific advantages. Therefore, planning for each mode needs to be articulated and co-ordinated to ensure a proper complementarity among them and to supplement each other for the most efficient and economical use. In addition, since transport needs would differ from country to country or from one region to another due to the local conditions as well as the scale and growth of economic activities, it would be essential to develop specific strategies for each country or region.

c) As already mentioned, economic growth in most developing countries depends on the performance of their agriculture. Bearing this in mind, in developing an efficient transport network in general, and road network in particular, high priority should be given to areas with high potential for agricultural development as well as potential market centres which should be connected through such a network to provide access to easy supply of industrial inputs - fertilizer, pesticides, equipment and tools, maintenance services etc. - to agriculture and marketing services of its outputs. These linkages can permit each sector's growth to encourage and reinforce the growth of the other. It will also pave the way to develop the market centres as future commercial and industrial centres within the framework of rural development. That requires the close interaction of planners, policy-makers, technologists, entrepreneurs and rural community leaders for drawing up a rural transport master plan.

d) In developing strategies for a country or a region special attention should be paid to disadvantaged areas like remote villages, isolated hills and islands, particularly with the aim of creating employment opportunities for the people in those areas.

e) Owing to the importance of transport services and their impact on the efficient functioning of the corresponding agricultural production system, investigation and specific feasibility studies should be undertaken on transport equipment associated with each product of significance to the national economies of a country or region. These studies should identify the most important characteristics of equipment for the transport of the product at its different stages. Special attention should be devoted to the handling of the product, the conditions of rural roads, the special environmental requirements of product, loading and unloading machinery, and storage and conservation requirements, as well as transport in larger volume to the market or export centres, before launching any programme of development and promotion of rural transport equipment.

f) In this connection, at the Global Preparatory Meeting, it was recognized by all participants that this line of action was very often neglected by planners and decision-makers. It was therefore stressed that Governments as well as the actors involved in developing countries should grant priority to the promotion of rural transport and manufacture of related equipment in their national development plans and programmes. In this respect, the need was expressed - once the different transport modes and their linkages have been appraised - to define the types of equipment suited to local conditions to be developed in the context of farm mechanization which should be an integral part of agricultural development plans.

g) This integrated multimodal and sectoral planning should include the institutional machinery to ensure its effectiveness and sustainability in order to use the scarce resources more rationally and to the maximum development benefit. That machinery would have to be designed not only for planning but also for monitoring such important fields as (a) pre-investmentstudies, (b) research and development, (c) industrial and investment promotion, (d) regulation of technology flows, (e) industrial, technological information, etc.

Annex 1

Principal types of equipment used in rural transport

Handcarts
Wheelbarrows
Animal-drawn carts
Trailers and semi-trailers
Bicycles, bicycle carts
Simple motorized transport equipment
Tractors and vans
Trucks and platform trucks
Roller or belt conveyors
Basket elevators
Shovel loaders
Four-wheel-drive
Pick-up chassis

Road transport equipment

Truck chassis
Vehicle bodies

Railway equipment

Locomotives
Waggons